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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,588	12/11/2003	Giora Biran	FIS920030288US1	8232

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EXAMINER	
CHAUDRY, MUJTABA M	

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/733,588	BIRAN ET AL.	
	Examiner	Art Unit	
	Mujtaba K. Chaudry	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

The Oath filed December 11, 2003 complies with all the requirements set forth in MPEP 602 and therefore is accepted.

Drawings

The drawings filed December 11, 2003 are accepted.

Specification

The specification filed December 11, 2003 is accepted.

Claim Rejections - 35 USC § 103

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elzur (USPN US 20030172342 A1) further in view of Applicants Admitted Prior Art (AAPA).

As per claim 1, Elzur substantially teaches systems and methods that identify the Upper Layer Protocol (ULP) message boundaries. In one example, a method that identifies ULP message boundaries is provided. The method may include one or more of the following steps: attaching a framing header of a frame to a data payload to form a packet, the framing header being placed immediately after the byte stream transport protocol header, the framing header comprising a length field comprising a length of a framing protocol data unit (PDU); and inserting a marker in the packet, the marker pointing backwards to the framing header and being inserted at a preset interval. Elzur teaches (Figures 4-5) the TCP frame 50 may include, for example, a TCP header 60; a framing header 70; one or more markers 80; a framing trailer 90 possibly including, for example, a pad or a cyclical redundancy checking (CRC); and a payload 100 that may include, for example, ULP data. FIG. 4 shows an embodiment in which one marker 80 is inside the TCP frame 50 and FIG. 5 shows an embodiment in which two markers 80 are inside the TCP frame 50. Although shown with one or two markers 80 inside the TCP frame 50, zero, three or more markers may be present inside the TCP frame 50. The TCP header 60 may be a conventional TCP header 60 and may provide, for example, location information within the TCP sequence number space. The CRC 90 may optionally be employed for error detection. The CRC 90 may cover, for example, the framing header 70, the one or more markers 80, the payload 100 and the pad, if present. Other types of error detection or error correction may also be used instead of or in addition to the CRC 90.

Elzur does not explicitly teach the TCP transmission control protocol to include a MPA frame as stated in the present application.

However, AAPA teaches (page 3 and figure 1b) the transmission control protocol 104 schedules outbound segments 106 and satisfies delivery and a includes a MPA frame in the marker. Therefore if would have been obvious to one of ordinary skill in the art at the time the invention was made to allow the marker of Elzur within TCP transmission control protocol to include a MPA frame. This modification would have been obvious to one of ordinary skill in the art because one of ordinary skill in the art would have recognized that by allowing the TCP transmission control protocol to include a MPA frame it would have significantly decreased overhead and eased synchronizing processes.

As per claim 2, Elzur substantially teaches, in view of above rejections, (Figures 10a-d) the receiver 30 may place the ULPDU data in that memory location with out placing the pad bytes (e.g., 0-3 bytes). In query 300, if the CRC does not match per the check done by the receiver 30, then, in query 360, the receiver 30 may determine whether the TCP layer processing has been done for the particular segment, which may be the case for layered implementation with no change to the TCP. If the TCP processing is done for that TCP segment 50, then, in step 370, the receiver 30 may tear down the TCP connection. There may be no way to recover from this error that has been detected by the stronger CRC employed by the framing layer, but that may have slipped through the less rigorous test of the TCP checksum.

As per claim 3, Elzur substantially teaches, in view of above rejections, (Figures 10a-d) in step 250, the receiver 30 may then locate the marker 80 in the TCP frame 50. The receiver 30 may obtain TCP sequence number information from the TCP header for the TCP frame 50. In addition, to locate the marker 80, the receiver 30 may subtract the initial non-zero value of the TCP sequence number for the first TCP payload byte in that particular TCP stream. The receiver

30 may then perform a modulo operation on the TCP sequence numbers using the preset interval at which the marker 80 is located. The receiver 30 need not locate all markers, if more than one is present, since using the one marker may be sufficient. In query 260, the receiver 30 may determine whether a marker is present inside the TCP segment 50. If present, then, in step 270, the receiver 30 may locate the framing header 70 using the information stored in the marker 80.

As per claim 4, Elzur substantially teaches, in view of above rejections, (Figure 10a) the receiver 30 may place the ULPDU data in that memory location with out placing the pad bytes (e.g., 0-3 bytes).

As per claim 5, Elzur substantially teaches, in view of above rejections, (page 5) the receiver 30 may determine location information within the TCP sequence number space from the TCP headers 60. In one example in which the marker 80 is placed every 512 bytes in the TCP stream, the receiver 30 may perform a modulo 512 operation to locate the marker80. As the TCP sequence space may start from a non-zero value, which may vary from one TCP connection to another TCP connection, the preset interval may be calculated by subtracting the initial non-zero value from the TCP sequence number carried inside the TCP header and performing a modulo 512 on the result.

As per claim 6, AAPA substantially teaches, in view of above rejections, (Figure 1b) a MPA frame which has header, payload, marker and CRC. The Examiner would like to point out that choosing various lengths for each is a matter of design choice and applicability requirements.

As per claims 7 and 8, Elzur substantially teaches, in view of above rejections, (Figures 4-5) the TCP frame 50 may include, for example, a TCP header 60; a framing header 70; one or

more markers 80; a framing trailer 90 possibly including, for example, a pad or a cyclical redundancy checking (CRC); and a payload 100 that may include, for example, ULP data. FIG. 4 shows an embodiment in which one marker 80 is inside the TCP frame 50 and FIG. 5 shows an embodiment in which two markers 80 are inside the TCP frame 50. Although shown with one or two markers 80 inside the TCP frame 50, zero, three or more markers may be present inside the TCP frame 50.

As per claim 9, Elzur substantially teaches systems and methods that identify the Upper Layer Protocol (ULP) message boundaries. In one example, a method that identifies ULP message boundaries is provided. The method may include one or more of the following steps: attaching a framing header of a frame to a data payload to form a packet, the framing header being placed immediately after the byte stream transport protocol header, the framing header comprising a length field comprising a length of a framing protocol data unit (PDU); and inserting a marker in the packet, the marker pointing backwards to the framing header and being inserted at a preset interval. Elzur teaches (Figures 4-5) the TCP frame 50 may include, for example, a TCP header 60; a framing header 70; one or more markers 80; a framing trailer 90 possibly including, for example, a pad or a cyclical redundancy checking (CRC); and a payload 100 that may include, for example, ULP data. FIG. 4 shows an embodiment in which one marker 80 is inside the TCP frame 50 and FIG. 5 shows an embodiment in which two markers 80 are inside the TCP frame 50. Although shown with one or two markers 80 inside the TCP frame 50, zero, three or more markers may be present inside the TCP frame 50. The TCP header 60 may be a conventional TCP header 60 and may provide, for example, location information within the TCP sequence number space. The CRC 90 may optionally be employed for error

detection. The CRC 90 may cover, for example, the framing header 70, the one or more markers 80, the payload 100 and the pad, if present. Other types of error detection or error correction may also be used instead of or in addition to the CRC 90.

Elzur does not explicitly teach the TCP transmission control protocol to include a MPA frame as stated in the present application.

However, AAPA teaches (page 3 and figure 1b) the transmission control protocol 104 schedules outbound segments 106 and satisfies delivery and a includes a MPA frame in the marker. Therefore if would have been obvious to one of ordinary skill in the art at the time the invention was made to allow the marker of Elzur within TCP transmission control protocol to include a MPA frame. This modification would have been obvious to one of ordinary skill in the art because one of ordinary skill in the art would have recognized that by allowing the TCP transmission control protocol to include a MPA frame it would have significantly decreased overhead and eased synchronizing processes.

As per claim 10, Elzur substantially teaches, in view of above rejections, (Figures 10a-d) the receiver 30 may place the ULPDU data in that memory location with out placing the pad bytes (e.g., 0-3 bytes). In query 300, if the CRC does not match per the check done by the receiver 30, then, in query 360, the receiver 30 may determine whether the TCP layer processing has been done for the particular segment, which may be the case for layered implementation with no change to the TCP. If the TCP processing is done for that TCP segment 50, then, in step 370, the receiver 30 may tear down the TCP connection. There may be no way to recover from this error that has been detected by the stronger CRC employed by the framing layer, but that may have slipped through the less rigorous test of the TCP checksum.

As per claim 11, Elzur substantially teaches, in view of above rejections, (Figures 10a-d) in step 250, the receiver 30 may then locate the marker 80 in the TCP frame 50. The receiver 30 may obtain TCP sequence number information from the TCP header for the TCP frame 50. In addition, to locate the marker 80, the receiver 30 may subtract the initial non-zero value of the TCP sequence number for the first TCP payload byte in that particular TCP stream. The receiver 30 may then perform a modulo operation on the TCP sequence numbers using the preset interval at which the marker 80 is located. The receiver 30 need not locate all markers, if more than one is present, since using the one marker may be sufficient. In query 260, the receiver 30 may determine whether a marker is present inside the TCP segment 50. If present, then, in step 270, the receiver 30 may locate the framing header 70 using the information stored in the marker 80.

As per claim 12, Elzur substantially teaches, in view of above rejections, (Figure 10a) the receiver 30 may place the ULPDU data in that memory location with out placing the pad bytes (e.g., 0-3 bytes).

As per claim 13, Elzur substantially teaches, in view of above rejections, (page 5) the receiver 30 may determine location information within the TCP sequence number space from the TCP headers 60. In one example in which the marker 80 is placed every 512 bytes in the TCP stream, the receiver 30 may perform a modulo 512 operation to locate the marker80. As the TCP sequence space may start from a non-zero value, which may vary from one TCP connection to another TCP connection, the preset interval may be calculated by subtracting the initial non-zero value from the TCP sequence number carried inside the TCP header and performing a modulo 512 on the result.

As per claim 14, AAPA substantially teaches, in view of above rejections, (Figure 1b) a MPA frame which has header, payload, marker and CRC. The Examiner would like to point out that choosing various lengths for each is a matter of design choice and applicability requirements.

As per claims 15 and 16, Elzur substantially teaches, in view of above rejections, (Figures 4-5) the TCP frame 50 may include, for example, a TCP header 60; a framing header 70; one or more markers 80; a framing trailer 90 possibly including, for example, a pad or a cyclical redundancy checking (CRC); and a payload 100 that may include, for example, ULP data. FIG. 4 shows an embodiment in which one marker 80 is inside the TCP frame 50 and FIG. 5 shows an embodiment in which two markers 80 are inside the TCP frame 50. Although shown with one or two markers 80 inside the TCP frame 50, zero, three or more markers may be present inside the TCP frame 50.

As per claim 17, Elzur substantially teaches systems and methods that identify the Upper Layer Protocol (ULP) message boundaries. In one example, a method that identifies ULP message boundaries is provided. The method may include one or more of the following steps: attaching a framing header of a frame to a data payload to form a packet, the framing header being placed immediately after the byte stream transport protocol header, the framing header comprising a length field comprising a length of a framing protocol data unit (PDU); and inserting a marker in the packet, the marker pointing backwards to the framing header and being inserted at a preset interval. Elzur teaches (Figures 4-5) the TCP frame 50 may include, for example, a TCP header 60; a framing header 70; one or more markers 80; a framing trailer 90 possibly including, for example, a pad or a cyclical redundancy checking (CRC); and a payload

100 that may include, for example, ULP data. FIG. 4 shows an embodiment in which one marker 80 is inside the TCP frame 50 and FIG. 5 shows an embodiment in which two markers 80 are inside the TCP frame 50. Although shown with one or two markers 80 inside the TCP frame 50, zero, three or more markers may be present inside the TCP frame 50. The TCP header 60 may be a conventional TCP header 60 and may provide, for example, location information within the TCP sequence number space. The CRC 90 may optionally be employed for error detection. The CRC 90 may cover, for example, the framing header 70, the one or more markers 80, the payload 100 and the pad, if present. Other types of error detection or error correction may also be used instead of or in addition to the CRC 90.

Elzur does not explicitly teach the TCP transmission control protocol to include a MPA frame as stated in the present application.

However, AAPA teaches (page 3 and figure 1b) the transmission control protocol 104 schedules outbound segments 106 and satisfies delivery and a includes a MPA frame in the marker. Therefore if would have been obvious to one of ordinary skill in the art at the time the invention was made to allow the marker of Elzur within TCP transmission control protocol to include a MPA frame. This modification would have been obvious to one of ordinary skill in the art because one of ordinary skill in the art would have recognized that by allowing the TCP transmission control protocol to include a MPA frame it would have significantly decreased overhead and eased synchronizing processes.

As per claim 18, Elzur substantially teaches, in view of above rejections, (Figures 10a-d) the receiver 30 may place the ULPDU data in that memory location with out placing the pad bytes (e.g., 0-3 bytes). In query 300, if the CRC does not match per the check done by the

receiver 30, then, in query 360, the receiver 30 may determine whether the TCP layer processing has been done for the particular segment, which may be the case for layered implementation with no change to the TCP. If the TCP processing is done for that TCP segment 50, then, in step 370, the receiver 30 may tear down the TCP connection. There may be no way to recover from this error that has been detected by the stronger CRC employed by the framing layer, but that may have slipped through the less rigorous test of the TCP checksum.

As per claim 19, Elzur substantially teaches, in view of above rejections, (Figure 10a) the receiver 30 may place the ULPDU data in that memory location with out placing the pad bytes (e.g., 0-3 bytes).

As per claim 20, Elzur substantially teaches, in view of above rejections, (page 5) the receiver 30 may determine location information within the TCP sequence number space from the TCP headers 60. In one example in which the marker 80 is placed every 512 bytes in the TCP stream, the receiver 30 may perform a modulo 512 operation to locate the marker80. As the TCP sequence space may start from a non-zero value, which may vary from one TCP connection to another TCP connection, the preset interval may be calculated by subtracting the initial non-zero value from the TCP sequence number carried inside the TCP header and performing a modulo 512 on the result.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Additional pertinent prior arts are included herein for Applicant's review.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mujtaba K. Chaudry whose telephone number is 571-272-3817. The examiner can normally be reached on Mon-Thur 9-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on 571-272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mujtaba Chaudry
Art Unit 2133
May 26, 2006

GUY LAMARRE
PRIMARY EXAMINER